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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/616,095	07/08/2003	Makoto Hosokawa	245402006800	1633
25226	7590	08/26/2004	EXAMINER	
MORRISON & FOERSTER LLP 755 PAGE MILL RD PALO ALTO, CA 94304-1018			HU, SHOUXIANG	
			ART UNIT	PAPER NUMBER
			2811	

DATE MAILED: 08/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/616,095

Applicant(s)

HOSOKAWA ET AL.

Examiner

Shouxiang Hu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 June 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3 and 5-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3 and 5-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claims 3 and 6-9 are objected to because of the following informalities and/or defects:

In claims 3 and 6-9, the term of "includes" should read as: --further includes--.

Claims 6-9 each recite the subject matter that the protection film includes a film, but fail to clarify what is the relationship between this film and the polyimide-based resin film recited in claim 1.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1, 3 and 5-10 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 1 recites the subject matters that the recited protection film includes a polyimide-based resin and that it has an index of refraction different from that of the recited

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mold material by at most 0.3. However, the original disclosure of the instant application lacks an adequate description on such combined subject matters. More specifically, it lacks an adequate description regarding what is the index of refraction for the recited polyimide-based resin. Instead, what is emphasized in it is that the silicon oxide layer when used as the protection layer has an index of refraction no larger than 0.3 (see page 9, lines 1-6, and page 11, lines 24-26).

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 3, 5, 6 and 10, insofar as being in compliance with 35 U.S.C. 112 and as being best understood in view of the claim objections above, are rejected under 35 U.S.C. 102(b) as being anticipated by JP'604 (JP 9-153604).

JP'604 discloses a semiconductor/optical device (Figs. 1 and 2; also see the English abstract and the newly provided translation for Paragraph [0016]; and see the machine translation as a rough translation reference), comprising: a light-receiving element (10) having a light-receiving face formed on a main surface of a semiconductor substrate (1); an antireflection coating (7), wherein the top layer 18 is formed of a mode resin layer which can naturally include a polyimide-based resin; such a resin layer can be regarded as being formed of a plurality of layers;

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an upper portion of such resin layer 18 is naturally readable as a mold material; and a lower portion layer of such resin layer 18 can be regarded as a polyimide-based resin protection film, as it is formed above the underling antireflection coating (7) and thus naturally protects the underling antireflection coating (7) against outside moistures. And, the difference in index of refraction of the upper and lower portions of the resin layer 18 is naturally no larger than 0.3. Besides, the combination of the silicon oxide layer (17) and the lower portion of the resin layer (18) in JP'604 is also naturally readable as the recited protection layer, since each of the silicon oxide layer (17) and the lower portion of the resin layer has an index of refraction differing from that of the upper portion of the resin layer (18) by no more than 0.3.

Regarding claims 5 and 6, the device of JP'604 further comprise a signal processing circuit portion (20), wherein a first insulating film covering the signal processing circuit portion and the protection film are formed of different portions of a same layer (such as the same lower portion of the resin layer 18).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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7. Claims 7-9, insofar as being in compliance with 35 U.S.C. 112 and as being best understood in view of the claim objections above, are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art ("AAPA") in view of JP'604 and/or Ohkubo (US 6,635,912).

AAPA disclose a semiconductor/optical device (Fig. 5), including the first, second and third interlayer insulating films (120, 113 and 118, respectively), which is readable as the claimed instant invention, except that these insulating films in AAPA do not extend to also cover the photodiode window region.

However, one of ordinary skill in the art would readily recognize that the extension of such interlayer insulating films is desirable for simplifying the process and adding further protection to the photodiode region, as evidenced in JP'604 (whose disclosure is discussed as applied to claims 1, 3, 5, 6 and 10 above; see the lower portion of the resin layer 18 and/or the interlayer insulating film 17 in Figs. 1 and 2) and Ohkubo (see the interlayer insulating films 72 and 74 in Fig. 1).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the device of AAPA with the protection layer and/or two or more of the interlayer insulting films being extended to also cover the photodiode region, per the teaching of JP'604 and/or Ohkubo, so that a device with further protection to the photodiode therein would be obtained with a simplified process.

Response to Arguments

Applicant's arguments filed on June 16, 2004, have been fully considered but they are not persuasive.

Applicant's main arguments include: (A) JP'604 does not include the recited protection film made of the recited polyimide-base resin; and (B) The resin layer 18 in JP'604 is not formed on the antireflection coating.

In response, it is noted that, insofar as being in compliance with 35 U.S.C. 112, the top mode resin layer 18 in JP'604 can naturally include a polyimide-based resin and can be regarded as being formed of a plurality of sub-layers. Since the claimed invention is directed to a product, any potential implications regarding how the individual sub-layers are formed are treated as process limitations. And, such type of process limitations would not carry patentable weight in the claims drawing to a structure, because distinct structure is not necessarily produced. In re Thorpe, 227 USPQ 964, 966 (Fed. Cir. 1985). Accordingly, the upper portion of the resin layer 18 in JP'604 is naturally readable as a mold material; and the lower portion layer of such resin layer 18 is readable as the recited polyimide-based resin protection film.

Furthermore, the lower portion of resin layer 18 therein can be naturally regarded as being "formed on" the underling antireflection film (7), since it is formed directly above and supported eventually by the underling antireflection coating (7) and the term of "on" does not always necessarily have to be interpreted as meaning: "above and in direct contact".

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Besides, the combination of the silicon oxide layer (17) and the lower portion of the resin layer (18) in JP'604 is also naturally readable as the recited protection layer, since each of the silicon oxide layer (17) and the lower portion of the resin layer has an index of refraction differing from that of the upper portion of the resin layer (18) by no more than 0.3.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shouxiang Hu whose telephone number is 571-272-1654. The examiner can normally be reached on Monday through Thursday, 7:30 AM to 6:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie C. Lee can be reached on 571-272-1732. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SH

August 23, 2004



SHOUXIANG HU
PRIMARY EXAMINER